



20<sup>th</sup>

INTERNATIONAL WORKSHOP  
ON SURFACTANT REPLACEMENT

June 2<sup>nd</sup> - 5<sup>th</sup>, 2005

## Poster Abstracts

### Belfast, Northern Ireland

#### ALBUMIN LAVAGE DOES NOT IMPROVE THE CONDITION IN MEKONIUM ASPIRATION SYNDROME

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Meconium aspiration syndrome (MAS) is a severe disorder with high morbidity and mortality. MAS occurs in about 5-12% of all deliveries with meconium stained amniotic fluid (MSAF). Still current therapies are supportive only.

Meconium contains desquamated cells from skin and alimentary tract, lanugo hairs, fatty material, amniotic fluid and intestinal secretions. The free fatty acids and bile acids may affect pulmonary capillary permeability, pulmonary vascular resistance and surfactant function. Albumin may bind lipid and bile acids. We have previously in a piglet model shown a significant reduction in oxygenation index (OI) when meconium was mixed with albumin before instillation (1) and also a significant improvement in lung compliance when albumin was instilled endotracheally after instillation of meconium (2). Meconium is also a potent activator of the complement system *in vitro* and *in vivo*. (3) We here investigated whether rescue therapy with albumin improves ventilation and oxygenation in experimental MAS and influences proinflammatory cytokines and TCC.

**Methods:** Anaesthesia was induced with Halothane and maintained by intravenous Fentanyl and Midazolam. Hypoxia was induced by supplying 8% oxygen in nitrogen until base excess reached -15mmol/l. MAS was then induced by instillation of meconium into the lungs of newborn pigs in a wellknown model of MAS. Albumin 15ml/kg was instilled 5 minutes after instillation of meconium. Endotracheal suction was performed 15 minutes after instillation of meconium and every hour. Control animals received only meconium or saline under otherwise identical conditions. The observation period was 6 hours. Hemo- and lung dynamics were recorded. Systemic complementactivation (TCC) and cytokines were measured in plasma samples by immunoassays.

**Results:** There were no statistic significant differences in Oxygenation index (OI) and VI between the two groups. OI in the meconium abumin group was 9,7 and in the meconium group 4,21 after one hour of reoxygenation and 12,24 and 5,04 after 6 hours. There were no significant differences between cytokines and TCC in the groups.

**Conclusion:** We intended that Albumin should cleanse the airways and bind free fatty acids in the mekonium. Albumin itself may alter surfactant function and albumin lavage will shed surfactant from the lungs.

Albumin instillation/lavage did not improve lung dynamics.

#### Ref:

1 Tølløfsrud et al. *Pediatr Res* 2002;52:545-553.

2 Lindenskov et al. *Ped research*, in press.

3 Castellheim et al. *Pediatr Res* 2004; 55:310-318.